



National Aeronautics and Space Administration  
Goddard Space Flight Center

Wallops Flight Facility, Wallops Island, Virginia

# Inside Wallops

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## ***NASA Looks to Future Science Exploration Using Ultra-Long Duration Balloon***

NASA has begun preparation of a new unpiloted scientific balloon that will fly around the world in the year 2000. The new super pressure Ultra-Long Duration Balloon (ULDB) is designed to stay aloft at altitudes reaching 120,000 feet for up to 100 days with over a ton of scientific and support equipment. This new technology presents significant opportunities to perform many types of research in space and earth science effectively and inexpensively.

NASA Wallops Flight Facility announced last week that Raven Industries, Sioux Falls, SD has been selected to manufacture the new super pressure Ultra-Long Duration Balloon.

Raven Industries is to fabricate the ULDB Demonstration 2000 balloon as well as all test flight and backup balloons leading up to the first demonstration flight of the balloon currently scheduled for December 2000 from New Zealand. Each balloon is estimated to cost approximately \$360,000.

"The selection of Raven Industries to manufacture the ULDB marks the end of months of testing on different material composites. We can now proceed with the design phase and prepare for the first test flight of the balloon using the new technology, which is scheduled for March 1999 from Ft. Sumner, NM," said Steve Smith, NASA Wallops Project Manager for the ULDB.

NASA presently flies conventional and long duration scientific zero pressure balloons with flights lasting from a day to three weeks. Zero pressure balloons are made of a thin polyethylene material, (.8 millimeters), about the same thickness as ordinary sandwich wrap. They are partially inflated with helium when launched. As they rise, helium expands until the balloon reaches full inflation. Fully inflated the scientific balloons range up to 40 million cubic feet in volume, 600 feet in diameter and are taller than a 60-story building.

Zero pressure balloons must vent some gas as daytime temperatures rise causing the balloon to expand. As night approaches, the remaining gas shrinks causing the balloon volume to decrease and the balloon to descend. In order to stay aloft, the balloon system must drop ballast. As a result, most zero-pressure balloon flights last only a short time.

"Similar in size to current balloons, the super pressure balloon will maintain

lift, size and shape and will not lose significant altitude due to atmospheric influences. The material composite developed by Wallops will make this possible," said Harvey Needleman, Chief, Balloon Program Office at Wallops. "The current prototype is a high strength, low weight composite material composed of polyester fabric, polyester film, and polyethylene film.

The new material will be capable of withstanding high internal pressures caused by solar heating."

"For missions not requiring an orbital or deep space placement, you can create larger, more sophisticated payloads at significantly lower cost," said Dr. Jack Tueller, Balloon Project Scientist at GSFC, Greenbelt, MD. Tueller said that balloon launched payloads are ideal for high resolution optical and infrared telescopes to search for planets around nearby stars, hard x-ray and gamma-ray telescopes to study black holes, and cosmic microwave background surveys to study cosmology and the early universe.

More information about the NASA's Balloon Program can be found at: <http://www.wff.nasa.gov/pages/scientificballoons.html>

## ***Wallops Shorts..... Fire Department***

Wallops Emergency Medical Technicians responded with an ambulance to a request from Accomack County 911 for a medical emergency near Mappsville on Nov. 5 and another near Horntown on Nov. 12.

## ***NASA Signs Chesapeake Ecosystem Unified Plan***

NASA has signed the Federal Agencies' Chesapeake Ecosystem Unified Plan to strengthen the partnership between 26 federal agencies and the EPA Chesapeake Bay Program.

The Chesapeake Bay Program has been a model for watershed management and interagency cooperation for 15 years. The Federal partners within the Bay Program have been playing an increasingly important role in the past few years and are continuing with that effort.

"NASA is pleased to be a part of the Federal Agencies' Chesapeake Ecosystem Unified Plan. One of our top priorities at NASA is to serve and benefit the quality of life on Earth," said Jeffrey Sutton, NASA Associate Administrator for the Office of Management Systems and Facilities.

The agreement solidifies NASA's commitment to utilize its remote sensing capabilities to better understand the Bay ecosystem and the impacts on the surrounding communities. NASA looks forward to the partnership with EPA and other parties to this agreement, which will benefit the largest and most biologically diverse estuary in the United States.

## ***NASA Helps Preserve the Star-Spangled Banner***

A NASA infrared camera developed to explore Mars will assist the Smithsonian Institution in its three-year project to preserve the Star-Spangled Banner.

The camera, built at NASA's Goddard Space Flight Center, Greenbelt, MD, is taking images of the historic flag in infrared light to help preservationists identify deteriorated and soiled areas not obvious to the human eye. The camera, called the Acousto-Optic Imaging Spectrometer (AOIS), was developed by Dr. David Glenar at Goddard.

Considered a national treasure, the Star-Spangled Banner flew over Fort McHenry in Baltimore, MD, during the War of 1812 and inspired the words that became the U.S. national anthem. Despite receiving extra special care at the Smithsonian's National Museum of American History, the flag is deteriorating from decades of exposure to light, air pollution and temperature fluctuations.



*One of two small test balloons is being inflated for launch from Ft. Sumner, NM prior to the selection of a material composite to use for the ULDB.*

Change to Government  
Travel Charge Card  
Program

NationsBank was recently awarded NASA's Travel Card Services contract. The NationsBank MasterCard will replace your current American Express travel charge card, effective 7 p.m. EST on Nov. 30.

Employees who currently have an American Express travel charge card will be issued a NationsBank MasterCard in mid-November. A NationsBank card and access code will be separately mailed to your home address. You must activate your card by signing the cardholder agreement and returning it to NationsBank and calling the phone number NationsBank will give you and providing your activation code. Your personal identification number (PIN) allowing access to automatic teller machines (ATM) also will be mailed to your home.

For further information call Linda Layton, x1561.

Career Counselor Available

Wallops's Career Counselor, Mac Saddoris, will be on site Nov. 18, 19, and 20 in Building E-104. Career counseling involves creating Individual Development Plans, aligning your career goals with Goddard's reorganization, the clarification of your long-range strategic plans, and your career satisfaction.

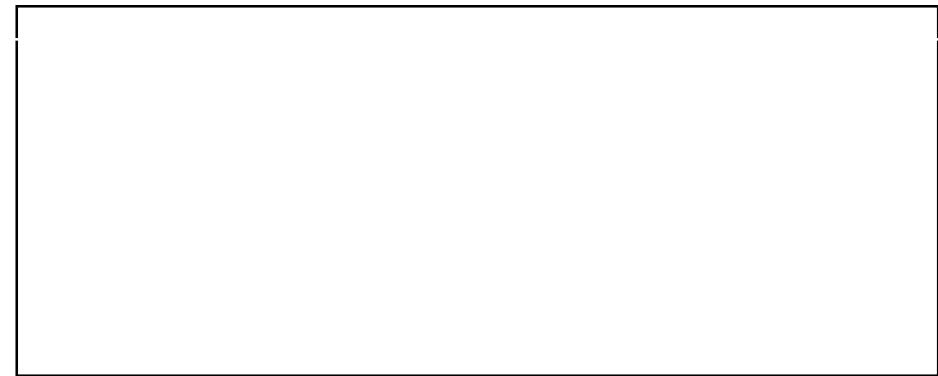
As with most other parts of our lives, having a plan, a path, and a strategy for where you are going with your career is highly satisfying. For an appointment call 66-5794 and leave a message.

Upcoming Training

Cryogenics Safety Class  
Wallops Flight Facility  
Jan. 12 - 14, 1999  
8 a.m. - 4 p.m.

This course will provide an in-depth understanding of NASA, OSHA, and NFPA requirements for the safe handling and usage of cryogenic fluids. It provides an overview of the basic principles of cryogenic fluids and the hazards associated with their use. The course targets those who design, implement, and operate flight and ground based cryogenic systems and supervise or have safety oversight/inspection responsibilities for operations involving cryogenic fluids.

This course is offered at no cost to NASA civil service and contractor employees. Personnel wishing to attend this course need to respond before Dec. 12. For further information, call Joe Drawdy, x1884..



WEMA/MAA MONTHLY  
TAILGATE SALE

November 18  
Starts @  
11:30 a.m.

Flag Court  
Parking Lot  
Across From  
the Cafeteria



If you didn't stop by in October, look at what you missed!

ATTN MEN: Real bargains were found on the tools that were sold. You *could have* bought REAL flowers for your significant other!

ATTN WOMEN: Some mighty fine buys were available on clothing. You *could get* a cheap, gripping murder mystery paperback novel to curl up with on a chilly, rainy afternoon.

FOOD LOVERS: Eastern Shore hayman and sweet potatoes and fresh pumpkins were sold.

Civil service, contract and tenant employees are invited to set up. Clean your closet, attic or barn this weekend and make some pocket money for Christmans. All leave or flex-time policies apply.

The Great  
American  
Smoke Out  
November 19



If you are considering quitting the habit, this is the day to make it happen.

Information is available at the Health Unit to help you start a new life "smoke free". Everyone knows the dangers of smoking and the benefits of quitting. Starting Nov. 19, kick the habit. You'll not only feel better, you'll smell better.

Call the Health Unit, x1766 for a free consultation.

For Sale

Two bedroom, one bath home in Pocomoke City, MD. Gas heat, large deck, vinyl siding, unfinished second floor with full size stairway. Asking \$59,000. Call 410 957-2943.

Upcoming Training

Title: *The Promotable Woman:  
What Makes the Difference*  
Dates: Dec. 7-8, 1998  
Location: GSFC, Bldg.1,  
Rm. E100B  
Time: 9 a.m. - 4:30 p.m.

Description: By the year 2000, women will share the labor force with their male counterparts 47% to 53% respectively. While the skills essential for professional success are common to both genders, research has shown that in this society women must incorporate additional traits in order to be successful in the workplace. Participants will have the opportunity to develop behavioral skills in the areas of positive attitudes, communications, goal setting, balancing career and home, stress management and gaining professional acceptance. Expanding these skills will make individuals a valuable asset when transforming into new jobs and new technologies.

Fund Source: Center  
Submission Deadline: Send Training Requests to Tammy Bolden, Code 117, by Nov. 27, 1998.

Title: *Organizing Your Work Space*  
Dates: Dec. 14-15, 1998  
Location: GSFC, Bldg. 1,  
Rm. E100E  
Time: 9 a.m. - noon on the 14th  
9 a.m. - 4 p.m. on the 15th

Description: This course helps participants organize their work areas and work habits. Participants will develop strategies for controlling the ever invading paper and clutter that hamper concentration and reduce efficiency. Students will learn to: eliminate clutter, use the five steps to organize anything, use tools for organizing, maintain order and prepare files (active, inactive and historical).

Fund Source: Center  
Submission Deadline: Send Training Requests for to Tammy Bolden, Code 117 by Nov. 30, 1998.

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